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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAYNE, SHARON E

ART UNIT PAPER NUMBER

2875

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/047,521

Applicant(s)

WORSDELL ET AL.

Examiner

Sharon E. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 32-46 and 48-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's election without traverse of claims 1-31 and 47 in Paper No. 9 is acknowledged. (The Applicant did not indicate that the election was with traverse, therefore the election is being treated as one without traverse.)

#### ***Information Disclosure Statement***

2. The information disclosure statement filed 13 November 2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

#### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the circuit should the connection of the strings of LEDs (claim 19), the strings of LEDs and prisms positioned orthogonally (claim 20), the potting compound acting as a spacer (claim 27) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. (All optical units have an optical structure that collects light from a light source and propagates the collected light through through the optical unit in a preselected direction.)

5. Claim 8 is objected to because of the following informality: the word "lens" in line 3 should be "lenses."

6. Claim 9 is objected to because of the following informality: the word "lens" in line 4 should be "lenses."

7. Claim 11 is objected to because of the following informality: the phrase "plurality lenses" in line 2 should be "plurality of lenses."

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. Claims 3, 20 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is indefinite for reciting the limitation "substantially vertical" in line 6. What plane is being referenced? Is it the plane of a piece of paper on a horizontal table or a plane extending upwards from the piece of paper?

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Claim 20 is indefinite for reciting the limitation "strings of LEDs and the prisms are positioned orthogonally with respect to each other" in lines 2 and 3. In what plane do the prisms lie, and in what plane do the strings of LEDs lie?

Claim 23 is indefinite for reciting the limitation "the optical unit is formed as an integral part" in lines 1 and 2. What is made in an integral manner with the optical unit?

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 4-6, 23, 24 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Meggs et al. (U.S. Patent 4,521,835).

Regarding claim 1, Meggs et al. discloses a flexible, elongated, lighting system. The lighting system includes an array of LEDs (abstract), and an optical unit (housing member, reference number 4) positioned in front of the array of LEDs (Fig. 2), the optical unit being adapted to propagate fractions of the light emitted from the LEDs in selected directions in accordance with a predetermined angular distribution (column 4, lines 1-10).

Concerning claim 2, Meggs et al. discloses an optical unit adapted to redirect, in a substantially forward direction relative to the orientation of an aircraft to which the warning light is affixed (column 4, lines 1-10), at least some of the light which otherwise would be emitted from the LEDs in a substantially lateral direction relative to the orientation of the aircraft (column 4, lines 10-20). The portion of the claim starting with "wherein" in line 1 and ending with

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"navigation warning light" in line 2 constitutes use language, which is not given patentable weight. See M.P.E.P. 2112. (A navigation warning light is merely another use for a light; the structure is still that of a light.)

Regarding claim 4, Meggs et al. discloses the optical unit being positioned with respect to the LED array such that substantially all of the light emitted from the LEDs is incident upon the optical unit (Fig. 2).

Concerning claim 5, Meggs et al. discloses the optical unit employing refractive optics (Fig. 2).

Regarding claim 6, it fails to limit claim 1, which means that claim 6 is rejected on the same grounds that claim 1 is rejected.

Concerning claim 23, as best understood, Meggs et al. discloses the optical unit being formed as an integral part (Fig. 2).

Regarding claim 24, Meggs et al. discloses the optical unit as a molded, plastic element (column 3, lines 40-45).

Concerning claim 31, Meggs et al. discloses the optical unit (reference number 4) comprising an optical structure adapted to propagate fractions of the light emitted from the LEDs in selected directions in accordance with a predetermined angular distribution (column 4, lines 1-10).

11. Claims 1, 6-8, 10, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Serizawa et al. (U.S. Patent 4,733,335).

Regarding claim 1, Serizawa et al. discloses a vehicular lamp. The lamp includes an array of LEDs (reference number 111) and an optical unit positioned in front of the array of LEDs (condenser lenses, reference number 223), the optical unit being adapted to propagate

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fractions of the light emitted from the LEDs in selected directions in accordance with a predetermined angular distribution (Fig. 4). (Vehicle lamps must meet federal specifications for light output in various positions in front of the lamp.)

Concerning claim 6, it fails to limit claim 1, which means that claim 6 is rejected on the same grounds that claim 1 is rejected.

Regarding claim 7, Serizawa et al. discloses the first optical structure comprising a plurality of lenses adapted to collect light from the LEDs incident upon the optical unit (Fig. 2).

Concerning claim 8, Serizawa et al. discloses each of the LEDs being associated with a respective one of the plurality of lenses (Fig. 2).

Regarding claim 10, Serizawa et al. discloses each lens of the plurality of lenses positioned immediately in front of the LED with which the lens is associated (Fig. 2).

Concerning claim 12, Serizawa et al. discloses each lens of the plurality of lenses being spherical (column 6, last line).

Regarding claim 16, Serizawa et al. discloses a second optical structure (reference number 126) adapted to transmit the collected light from the optical unit (Fig. 2).

12. Claims 1, 6, 7, 9, 11, 25-27 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Roney et al. (U.S. Patent 5,528,474).

Regarding claim 1, Roney et al. discloses an LED array vehicle lamp. The lamp includes an array of LEDs (abstract) and an optical unit (reference number 16) positioned in front of the array of LEDs (Fig. 2), the optical unit being adapted to propagate fractions of the light emitted from the LEDs in selected directions in accordance with a predetermined angular distribution (Fig. 2). (Vehicle lamps must meet federal specifications for light output.)

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Concerning claim 6, it fails to limit claim 1, which means that claim 6 is rejected on the same grounds that claim 1 is rejected.

Regarding claim 7, Roney et al. discloses a first optical structure comprising a plurality of lenses adapted to collect light from the LEDs incident upon the optical unit (Fig. 2). Each lens rib of reference number 16 is considered to be a lens.

Concerning claim 9, Roney et al. discloses the array of LEDs comprising a plurality of rows of LEDs (Fig. 1) and each of the rows is associated with a respective one of the plurality of lenses (abstract).

Regarding claim 11, Roney et al. discloses each lens of the plurality of lenses being positioned immediately in front of the row of LEDs with which the lens is associated (Fig. 2).

Concerning claim 25, Roney et al. discloses a spacer adapted to position the optical unit at a selected distance from the LEDs (left and right ends of reference number 16, Fig. 2).

Regarding claim 26, Roney et al. discloses a spacer formed integrally with the optical unit (Fig. 2, reference number 16, ends).

Concerning claim 27, Roney et al. discloses the LEDs being encapsulated in a potting compound (reference number 14) and the potting compound is formed at a predetermined depth to provide the spacer (Fig. 2). The potting compound and the ends of the lenses both function as spacers.

Regarding claim 47, Roney et al. discloses an array of LEDs (abstract), an optical unit (reference number 16) having an optical structure adapted to propagate fractions of light emitted from the LEDs in selected directions in accordance with a predetermined angular distribution (Fig. 2), and spacing means for holding the optical unit at a fixed distance from the LEDs (Fig. 2). (Vehicle lamps must meet federal specifications for light output.)

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meggs et al. in view of Bodem (U.S. Patent 5,388,035).

Regarding claim 3, Meggs et al. does not disclose an optical unit that is adapted to redirect light in a substantially horizontal direction from a vertical direction. Bodem discloses an optical unit that is adapted to redirect, in a substantially horizontal direction relative to the orientation of an aircraft to which the warning light is affixed, at least some of the light which otherwise would be emitted from the LEDs in a substantially vertical direction relative to the orientation of the aircraft (abstract).

The portion of the claim starting with "wherein" in line 1 and ending with "anti-collision light" in line 2 constitutes use language, which is not given patentable weight. See M.P.E.P.

2112. (An anti-collision light is merely another use for a light; the structure is still that of a light.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optical unit of Bodem in the apparatus of Meggs et al. for spreading the light horizontally.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roney et al. in view of DE 4128995 A1 (hereinafter "Decker").

Regarding claim 13, Roney et al. does not disclose aspherical lenses. Decker discloses the plurality of lenses being aspherical. (See the Derwent abstract.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the aspherical lenses of Decker in the apparatus of Roney et al. to distribute the light as desired.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Serizawa in view of UK Patent Application GB 2,295,274 A (hereinafter "Bernard").

Regarding claim 14, Serizawa does not disclose total internal reflection structures. Bernard discloses an optical unit comprising total internal reflection structures (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the total internal reflection structures of Bernard in the apparatus of Serizawa for distributing the light as desired.

18. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roney et al. in view of Decker as applied to claim 13 above, and further in view of Bernard.

Regarding claim 14, Roney et al. does not disclose total internal reflection structures. Bernard discloses an optical unit comprising total internal reflection structures (abstract).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the total internal reflection structures of Bernard in the apparatus of Roney et al. for distributing the light as desired.

19. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serizawa in view of Kondo et al (U.S. Patent 6,296,376 B1).

Regarding claim 17, Serizawa does not disclose a second optical structure with one or more prisms. Kondo et al. discloses a second optical structure comprising one or more prisms adapted to propagate the collected light in accordance with the predetermined angular distribution (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optical structure of Kondo et al. in the apparatus of Serizawa for distributing light as desired.

Regarding claim 18, Serizawa does not disclose a plurality of prisms. Kondo et al. discloses a plurality of prisms extending along one or both of the length and width of the LED array to form a series of ridges on an outer surface of the optical unit (Fig. 5).

20. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Serizawa in view of Kondo et al. as applied to claim 18 above, and further in view of Fleischmann (U.S. Patent 6,203,180).

Regarding claim 19, Serizawa does not disclose strings of LEDs, each string being connected in parallel with the other strings or the prisms. Kondo et al. discloses the prisms positioned to extend across the LEDs of a plurality of the strings (Fig. 5). Fleischmann discloses LEDs being connected in series and parallel (abstract).

Fleishmann does not specifically disclose strings of LEDs connected in series, with the strings themselves being connected in parallel. Given the teaching of Fleishmann, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the LEDs as described in the claim in the Serizawa reference to regulate the power used.

21. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meggs et al. in view of Albou (U.S. Patent 6,273,591).

Regarding claim 21, Meggs et al. does not disclose an optical unit with convex lenses on one face and prisms on another. Albou discloses an optical unit comprising a transparent body having a first face provided with a first optical structure and a second face provided with a second optical structure (cells, reference character C), the second face being opposed to the first face (Fig. 1), the first optical structure being in the form of a plurality of convex lenses and the second optical structure being in the form of one or more prisims (Fig. 1), and the convex lenses being positioned with respect to the one or more prisims such that light from the optical unit is propagated in accordance with the predetermined angular distribution (Fig. 1).

22. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meggs et al. in view of Bodem as applied to claim 3 above, and further in view of Futami et al. (U.S. Patent 6,386,743).

Regarding claim 22, Meggs et al. does not disclose aspherical cylindrical lenses. Futami et al. discloses an optical unit comprising a transparent body having first and second opposed faces (Fig. 13), the first face being provided with a plurality of aspherical cylindrical lenses (Fig. 1, column 9 in line 63 to column 10 in line 10).

23. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meggs et al.

Regarding claim 28, Meggs et al. does not specifically disclose providing a gap between the LEDs and the optical unit of up to 5 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the spacing between the optical unit and the LEDs in the Meggs et al. reference to catch as much light in the optical element as possible.

Regarding claim 29, Meggs et al. does not specifically disclose providing a gap between the LEDs and the optical unit that is between 0.3 mm and 2mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the spacing between the optical unit and the LEDs in the Meggs et al. reference to catch as much light in the optical element as possible.

24. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meggs et al. in view of Gronemeier (U.S. Patent 6,461,029 B2).

Regarding claim 30, Meggs et al. does not disclose an IR LED. Gronemeier et al. discloses an IR LED (column 3, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the IR LED of Gronemeier in the apparatus of Meggs et al. to send optical identification patterns.

***Allowable Subject Matter***

25. Claim 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose a warning light with the strings of LEDs and prisms positioned orthogonally with respect to each other. (This claim is being interpreted according to the purpose of the arrangement outlined in the specification.)

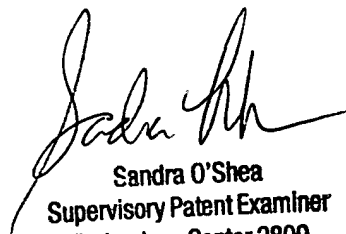
***Conclusion***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (703) 308-2125. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sep  
January 20, 2003

  
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